UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/735,142	12/12/2000	Robby Darren Benedyk	1322/61	5514

25297	7590	05/27/2004

JENKINS & WILSON, PA
3100 TOWER BLVD
SUITE 1400
DURHAM, NC 27707

EXAMINER
WONG, BLANCHE

ART UNIT	PAPER NUMBER
2667	17

DATE MAILED: 05/27/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO 90C (Rev 10/03)

	Application No.	Applicant(s)
Office Action Summary	09/735,142	BENEDYK ET AL.
	Examiner	Art Unit	
	Blanche Wong	2667	

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 December 2000*.

2a)☐ This action is **FINAL.**   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-55* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *22-49* is/are allowed.

6)☒ Claim(s) *1-8,10,11 and 17* is/are rejected.

7)☒ Claim(s) *9,12-16 and 18-21* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date *4-16/yr 2000-04*.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

Information Disclosure Statement

1.   The information disclosure statement filed January 30, 2004, fails to comply with

37 CFR 1.98(a)(1), which requires a list of all patents, publications, or other information

submitted for consideration by the Office. It has been placed in the application file, but

the information referred to therein has not been considered.

Form 1449 for non-patent literature of the information disclosure statement filed

January 30, 2004, is missing. Applicant is requested to provide a list of all non-patent

literature documents on a form 1449 for the information disclosure statement filed

January 30, 2004.

2.   Examiner noted that duplicate copies of references have been submitted. For

example: IDS papers, no. 11 and 15, refer to the same reference Bressler (U.S. Pat

No. 6,584,190); IDS papers, no. 4 and no. 6, refer to the same reference Olsen et al.

(U.S. Pat No. 5,008,929); and US Pat No. 6,011,803 listed in IDS paper no. 6 and EP

0853411 listed in IDS papers no. 10 are the same patent.

Claim Objections

3.   **Claims 2-8, 9,11-13, 29, 50, 52** are objected to because of the following

informalities: inconsistencies between the wording – including – and – that includes --,

and between the preposition – within – and – in --, between – a core network – and – a

core switching network –, and missing "the" and "(HSL)".

Claims 2 and 3 recite "receiving a RAN signaling message including an ATM

protocol component" in ln. 2 of both claims, whereas claims 4-8 recite "receiving a RAN

signaling message that includes an ATM protocol component" in ln. 2 of these claims.

Claim 9 recites "encapsulating the application part in a first protocol envelope" in

ln. 5, whereas claims 11 and 13 recite "encapsulating the application part protocol

component within a first protocol envelope" in ln. 1-2 and claim 12 recites

"encapsulating application part protocol component within a first protocol envelope" in

ln. 1-2.

Claim 29 recites -- a core network -- in ln. 13, but "a core switching network" is

mentioned in ln. 2-3.

Claim 50 does not use abbreviation "(HSL)" after a high-speed link module in ln.

2, whereas claim 52 recites "a high-speed link (HSL) module" in ln. 2.

Applicant is advised to practice consistency in the claims when referring to the

same step in a method. Appropriate correction is required.

Claim Rejections - 35 USC § 112

4.   The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly
> claiming the subject matter which the applicant regards as his invention.

5.   There is insufficient antecedent basis for these limitations in the following claims:

Claim 10 recites the limitations "encapsulating the message in a first protocol

envelope" in ln. 1-2; "the Q.2130.1 protocol component" in ln. 2-3; and "the Q.2130.1

component" in ln. 4.

Claim 50 recites the limitation "the core network" in ln. 20.

Claim 51 recites the limitations "the core network" in ln. 2 and "the RNC" in ln. 7.

Claim 52 recites the limitation "the core network" in ln. 18.

Claim 53 recites the limitations "the method of claim 52" in ln. 1, "the core

network" in ln. 2, "the RNC" in ln. 8.

Claim 54 recites the limitations "The RAN gateway" in ln. 1, "the Q.2150.1

message type" in ln. 3, and "the Q.2150.1 layer" in ln. 4.

Claim 55 recites the limitations "The RAN gateway" in ln. 1, "the Q.2150 layer" in

ln. 2, and "the Q.2150 message type" in ln. 3 and 4.

Claim Rejections - 35 USC § 103

6.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

7.   **Claims 1 and 11** are rejected under 35 U.S.C. 103(a) as being unpatentable

over Kim (U.S. Pat No. 6,680,953) in view of Michael McGrew, "Transport SS7

Signaling Over IP," Lucent Technologies Inc., p.1-8, (November 1998) (provided by

Applicant).

With regard to claim 1, Kim discloses a method for communicating a RAN

(mobile) signaling message between a RNC (RNC) and a core switching network

(MSC), the method comprising:

Receiving (col. 3, ln. 67), from an RNC, a RAN signaling message (col. 3, ln. 54-col. 4, ln. 10) that includes an ATM protocol component (col. 3, ln. 54-col. 4, ln. 10; see also ATM layer in Fig. 2) and an application part protocol component (col. 3, ln. 54-col. 4, ln. 10; see also application layer in Fig. 2);

transmitting (see point-to-point and a signaling message between the MSC and the RNC, col. 2, ln. 45-54) the RAN signaling message (col. 3, ln. 54-col. 4, ln. 10) to a core network (MSC).

However, Kim fails to explicitly show

encapsulating the application part protocol component of the RAN signaling message within a first protocol envelop;

replacing the ATM protocol component of the RAN signaling message with a non-ATM protocol component;

as recited in claim 1.

In an analogous art, McGrew discloses

encapsulating (see step 1 to provide transport of SS7 over IP on p.3, "encapsulate the SS7 information in an envelope") the application part protocol component of the RAN signaling message (SS7 information) within a first protocol envelop;

replacing (see step 2 to provide transport of SS7 over IP on p.3, "provide the necessary protocol to transport this envelope over TCP/IP") the ATM protocol

component of the RAN signaling message with a non-ATM protocol component (see

step 3 to provide transport of SS7 over IP on p.3, "provide the necessary modifications"

including "new protocol");

as recited in claim 1.

A person of ordinary skill in the art would have been motivated to employ

McGrew in Kim in order to obtain the transport SS7 signalling over an IP network

between any two network elements which have an SS7 protocol stack at MTP level 3

and/or above. McGrew, p.1, para. 5. The suggestion/motivation to do so would have

been to provide a way that utilizes the existing SS7 network (MTP and SCCP) layers to

ensure 'carrier class' service as expected by existing users of SS7. McGrew, p.1, para.

4. At the time the invention was made, therefore, it would have been obvious to one of

ordinary skill in the art to which the invention pertains to combine McGrew and Kim to

obtain the invention as specified in claim 1.

With regard to claim 11, McGrew also discloses encapsulating the application

part protocol component within and SUA layer, as recited in claim 11. See SUAL on p.

5.

8.   **Claims 2-8** are rejected under 35 U.S.C. 103(a) as being unpatentable over Kim

and McGrew as applied to claim 1 above, and further in view of admitted prior art in Fig.

2.

With regard to claim 2, the combination of Kim and McGrew discloses the

method of claim 1. However, the combination fails to explicitly show a RAN signaling

message having an AAL5 layer, as recited in claim 2.

Admitted prior art in Fig. 2 discloses a RAN signaling message 200 (protocol

stack of prior art. Protocols are used to communicate between core network and RNC;

and signaling is the communications which occur in order to set-up and tear down call

connections.) having an AAL5 layer, as recited in claim 2.

A person of ordinary skill in the art would have been motivated to employ

admitted prior art in the combination of Kim and McGrew in order to obtain a RAN

signaling message having AAL5. The suggestion/motivation to do so would have been

to provide protocols conventionally used to communicate between core network and a

RNC. Applicant's Specification, p. 6, ln. 1-3. At the time the invention was made,

therefore, it would have been obvious to one of ordinary skill in the art to which the

invention pertains to combine McGrew and Kim to obtain the invention as specified in

claim 2.

Furthermore, where Kim and McGrew do not clearly show an AAL5 adaptation

layer, it is inherent that in ATM, there is an AAL and AAL5 is an advanced version of

such.

With regard to claim 3, admitted prior art in Fig. 2 also discloses a RAN signaling message 200 (protocol stack of prior art. Protocols are used to communicate between core network and RNC; and signaling is the communications which occur in order to set-up and tear down call connections. Therefore, protocols are used within signaling messages. Protocol stacks show the inside of a protocol.) having a SSCOP layer. See also connection service in Kim, col. 3, ln. 62.

With regard to claim 4, admitted prior art in Fig. 2 also discloses a RAN signaling message 200 (protocol stack of prior art. Protocols are used to communicate between core network and RNC; and signaling is the communications which occur in order to set-up and tear down call connections. Therefore, protocols are used within signaling messages. Protocol stacks show the inside of a protocol.) having a SSCF-NNI layer, as recited in claim 4. See also connection management in Klm, col. 3, ln. 63-64.

With regard to claim 5, admitted prior art in Fig. 2 also discloses a RAN signaling message 200 (protocol stack of prior art. Protocols are used to communicate between core network and RNC; and signaling is the communications which occur in order to set-up and tear down call connections. Therefore, protocols are used within signaling messages. Protocol stacks show the inside of a protocol.) having a SCCP, as recited in claim 5. See also SNI (signaling network interface in SNL protocol) in Kim, col. 4, ln. 17.

With regard to claim 6, admitted prior art in Fig. 2 also discloses a RAN signaling message 200 (protocol stack of prior art. Protocols are used to communicate between core network and RNC; and signaling is the communications which occur in order to set-up and tear down call connections. Therefore, protocols are used within signaling messages. Protocol stacks show the inside of a protocol.) having a RANAP, as recited in claim 6. See also SS7 information in McGrew, p.3.

With regard to claim 7, admitted prior art in Fig. 2 also discloses a RAN signaling message 200 (protocol stack of prior art. Protocols are used to communicate between core network and RNC; and signaling is the communications which occur in order to set-up and tear down call connections. Therefore, protocols are used within signaling messages. Protocol stacks show the inside of a protocol.) having a Q.2150.1 protocol component, as recited in claim 7.

With regard to claim 8, admitted prior art in Fig. 2 also discloses a RAN signaling message 200 (protocol stack of prior art. Protocols are used to communicate between core network and RNC; and signaling is the communications which occur in order to set-up and tear down call connections. Therefore, protocols are used within signaling messages. Protocol stacks show the inside of a protocol.) having a Q.2630.1 protocol component, as recited in claim 8.

9.   **Claim 17** is rejected under 35 U.S.C. 103(a) as being unpatentable over Kim and

McGrew as applied to claims 1-6 and 11 above, and further in view of Olsen et al. (U.S.

Pat No. 5,008,929) (provided by Applicant).

With regard to claim 17, the combination of Kim and McGrew discloses the

method of claim 1. However, the combination fails to show generating a billing

information record based on information contained in the received RAN signaling

message, as recited in claim 17.

Olsen discloses generating a billing information record 110 based on information

contained in the received RAN signaling message, as recited in claim 17. The Olsen

billing system is used in a telephone signaling network and SS7, as disclosed by

McGrew, is a messaging network specially tailored for telephone signaling.

A person of ordinary skill in the art would have been motivated to employ Olsen

in Kim and McGrew in order to obtain a billing system for telephone signaling network.

The suggestion/motivation to do so would have been to provide a billing system

connected to at least one STP. Olsen, col. 2, ln. 6-8. At the time the invention was

made, therefore, it would have been obvious to one of ordinary skill in the art to which

the invention pertains to combine Olsen and Kim and McGrew to obtain the invention as

specified in claim 17.

Allowable Subject Matter

10.   **Claims 22-49** are allowed.

With regard to claims 22-23, the prior art of record fails to anticipate or make

obvious all limitations in a method for routing and converting messages communicated

between a SCTP-based core network and a RNC, including the step of

removing SSCOP, AAL5, and ATM layers from the first message;

using the MTP3B layer of the first message to determine an outbound SCTP

association and stream for the first message; and

routing the first message to the core network over the outbound SCTP

association and stream, as recited in claim 22.

With regard to claims 24-27, the prior art of record fails to anticipate or make

obvious all limitations in a method for routing and converting messages communicated

between a SCTP-based core network and a RNC, including the step of

receiving a first message from an RNC including Q.2630.1, Q.2150.1, MTP3B,

SSCF, SSCOP, AAL5, and ATM layer;

removing the SSCOP, AAL5, and ATM layers from the first message;

using the MTP3B layer to determine an outbound SCTP association and stream

for the first message;

encapsulating the Q.2163.1, Q.2150.1, and M3UA layers of the first message in

an SCTP/IP header, as recited in claim 24.

Furthermore, Q.2150.1 was found in prior arts after Applicant's filing date.

Q.2630.1 was found in one art prior to Applicant's filing date, but Graf et al. (U.S. Pat

No. 6,681,009) discloses a method of setting up and controlling a user plane connection

over a bearer transport mechanism using Q.AAL2 signaling protocol, the method

comprising restricting the maximum length of the Q.AAL2 greater than 272 octets. Graf,

col. 2, ln. 30-34; see also col. 1, ln. 44-46 where Q.2630.1 is referred to as Q.AAL2.

With regard to claim 28, the prior art of record fails to anticipate or make obvious

all limitations in a method for processing RANAP messages received from a RNC,

including the step of

using the MTP3B component of the message to select an outbound SCTP

association and stream for the message;

removing the MTP3B component from the message; and

adding an SCTP/IP component to the message.

With regard to claims 29-49, the prior art of record fails to anticipate or make

obvious all limitations in a routing node for routing a RAN signaling message between a

RNC and a core switching networking, including

a first communication module for receiving message from an RNC including

application-level components and ATM components and for removing the ATM

components from the messages; and

a second communication module for receiving the application-level components

from the first communication module, and encapsulating the adaptation layer in a lower-

level protocol other than ATM, as recited in claim 29.

11.   **Claims 9,12-16,18-21** are objected to as being dependent upon a rejected base

claim, but would be allowable if rewritten in independent form including all of the

limitations of the base claim and any intervening claims.

12.   **Claim 10** would be allowable if rewritten to overcome the rejection(s) under 35

U.S.C. 112, second paragraph, set forth in this Office action and to include all of the

limitations of the base claim and any intervening claims.

Conclusion

13.   The prior art made of record and not relied upon is considered pertinent to

applicant's disclosure.

Brody et al. (U.S. Pat No. 6,278,697) discloses a method and apparatus for

processing multi-protocol communications that receives a message from a first

communications device. The message is converted 337 a generic communication

protocol format, and then a second communication protocol format, before routing to a

second communication device.

Hameleers et al. (U.S. Pat No. 6,377,799) discloses interworking function in IP-

based radio telecommunications network. The shared interworking function (SIWF) is

not in the MSC. The IP-SIWF protocol stack is disclosed. Fig. 4.

Liao et al. (U.S. Pat No. 6,529,524) discloses a protocol for interworking services

between a PTN and IP-network. Fig. 2.

Mijares et al. (U.S. Pat No. 6,683,881) discloses an interface 14 between an SS7 network 10 and an IP network 12. The interface 14 (gateway) is a protocol 16 for transporting MAP and TCAP messages that eliminates the need for SS7 protocols, and the need to implement SCCP. Fig. 1; see also col. 16, ln. 51-59.

Miller et al. (U.S. Pat No. 6,324,183) discloses systems and methods for communication messages among SS7 SPS and IP nodes using STPs. The MTP is stripped from the first SS7 message. An IP routing layer is added to the SSCP layer and the TCAP layer that remain in the first SS7 message, to create a first IP message. Fig. 8 and 9.
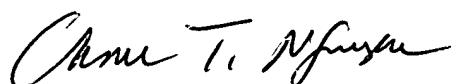
14.   Any inquiry concerning this communication or earlier communications from the examiner should be directed to Blanche Wong whose telephone number is 703-305-8963. The examiner can normally be reached on Monday through Friday, 830am to 530pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chi H Pham can be reached on 703-305-4378. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free).

BW
May 18, 2004

CHAU NGUYEN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600